DEC STD 012-1 Documentation Identification Conventions Including Mnemonic Codes

DOCUMENT IDENTIFIER: A-DS-EL00012-01-0000 Rev P, 27-Jul-1990

ABSTRACT: This standard establishes the document identification conventions for engineering documentation under the scope of DEC STD 012.

APPLICABILITY: This standard is mandatory for use by Digital personnel who generate and control engineering documentation.

STATUS: APPROVED 27-Jul-1990; use VTX SMC for current status.

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	Rev F,	14-May-1978	ECO Number MLO05
	Rev H,	06-Dec-1979	ECO Number MLO06
	Rev J,	27-Aug-1981	ECO Number MLO07
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Responsible Department: Chief Engineer's Office
Responsible Person: Dick Best

APPROVAL: This document has been reviewed and recommended for approval by the General Review group for its category.

Dick Best - Chief Engineer's Office (CEO)

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Use $ VTX ELF for the latest location information.

Use VTX SMC to order copies of this document from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

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1 INTRODUCTION

1.1 PURPOSE

This section specifies the composition and format of document identifiers. Document identifiers are simply groups of numbers and letters used to identify documents.

1.2 SCOPE

This standard applies to hard copy documents, documents created and stored on computer media, and hard copy documents created from data bases. It provides the rules for assigning and recording document identifiers. It also establishes DOCS (formerly DCF) as the mechanism for tracking part and/or document relationships.

Identifiers used for documents are standardized within this section by definition and control of the following:

a. Media/size code
b. Mnemonic code
c. Base Number
d. Variable identifier
e. Reference Identifier
f. Revision

No media and/or size code, or mnemonic code is considered valid on documentation unless listed in this standard.

Mnemonic codes listed as being "Inactive" may appear on documentation with initial release prior to the effectivity date noted in Table 3. Inactive codes are not allowed on newly created documents that are released after that date.

Mnemonic codes listed as plant specific are not to be used for engineering and other documentation applicable outside the specific plant assigning that document identifier.

NOTE

Literature, such as manuals, users guides, field maintenance print sets, brochures, and so on, are defined as parts and thus require part identifiers (refer to subhead 2.2 in *DEC STD 012-0 Part Identification Standard*).

1.3 RESPONSIBILITIES

1.3.1 Persons Who Assign Numbers

All persons who assign document identifiers shall conform to the requirements of this standard.

1.3.2 Engineering Services Design/Drafting/Checking

These groups are responsible for assigning document identifiers applicable to engineering documents in accordance with the methods and requirements of this standard.

1.3.3 Other Organizations

Other engineering and engineering support organizations, including manufacturing plants that produce engineering documentation are responsible for meeting the requirements of this standard.

1.3.4 Engineering Services Site Design Libraries

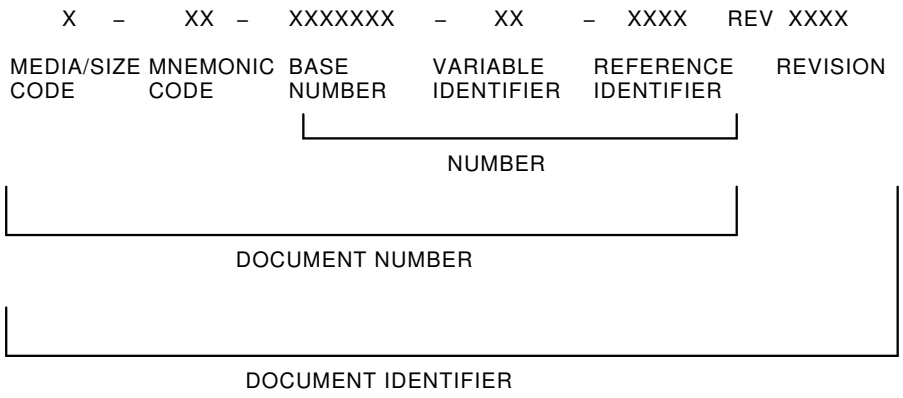
Engineering Services Site Design Libraries are responsible for making sure the requirements of this standard are met before accepting a new or revised engineering document. Design Libraries are also responsible for updating and maintaining DOCS in accordance with heading 4.

2 DOCUMENT IDENTIFIER

2.1 GENERAL

A document identifier is required to identify every document that must be controlled within Digital. The use of the word "Controlled" in this standard means stored, and retrievable by any employee who needs it. Each document identifier must be in the DOCS System.

2.2 Document Identifier Format



2.2.1 Number

The number has 13 characters, excluding dashes. This includes the 7-character base number, the 2-character variable identifier and the 4-character reference identifier.

2.2.2 Document Number

The document number is made up of 16 characters, excluding dashes. This includes a 1-character media/size code, a 2-character mnemonic code, a 7-character base number, a 2-character variable identifier, and a 4-character reference identifier.

2.2.3 Document Identifier

The document identifier has 20 characters, excluding dashes. This includes the 16-character document number and the 4-character document revision.

2.2.4 Field Separation

For the display of document identifiers, the first two fields (media/size code, and mnemonic code) shall be separated by dashes or shall appear in separate boxes allocated to the fields. The third, fourth, and fifth fields (base number, variable identifier, and reference identifier) must always be separated by dashes, and may as a group appear in a single box allocated to the fields. The last field (revision) is either separated from the other fields by the marker "REV" or shall appear in a box, as shown in the following example.

For example: K–UA–7010714–0–0 REV A

or

SIZE	CODE	NUMBER	REV.
K	UA	7010714–0–0	A

NOTE

Except for the first two fields (media/size code and mnemonic code), the fields may contain fewer characters than the maximum allowed for those fields.

In reference (look-up) applications the media/size code need not appear. Every document identifier shall be unique if the media/size code is omitted.

2.3 MEDIA/SIZE CODE

The 1-character media/size code indicates the medium on which the ORIGINAL information is documented. Media categories are paper (including plastic film or Mylar) or computer media. If the medium is paper, this code indicates paper size of the original document.

The media/size code is used for storing and retrieving ORIGINAL documentation. Documents created on paper medium shall use the code indicating physical size. For example, "A" indicates 8-1/2 x 11 inches. All computer-generated documents use the code "K".

Table 1 lists the standard sizes that apply to engineering drawings made in U.S. customary sizes. These sizes are assigned alphabetic designations.

Table 2 lists the standard sizes that apply to engineering drawings made in metric sizes, and the numeric 1-character media/size code used to designate them.

NOTE 1

Although the use of E-, J-, and A0-size drawings is authorized by this standard, design drafting groups should recognize that the E, J, and A0 sizes are not suitable for inclusion in Field Maintenance Print Sets because they cannot be reproduced by standard processes.

NOTE 2

When reproducing documents the original media/size code must not be changed regardless of the size of the reproduction. The media/size of all computer generated documents shall remain "K" when reproduced.

Table 1: Standard U.S. Customary Sizes

Letter Size Designation	Dimensions			
	Height		Width	
	inch	mm (approx.)	inch	mm (approx.)
A (vertical)	11	279	8-1/2	216
A (horizontal)	8-1/2	216	11	279
B	11	279	17	432
C	17	432	22	559
D	22	559	34	863
E	34	863	44	1117
J (minimum)	36	914	48(minimum)	1219
K	Computer Generated			

Table 2: Standard Metric Sizes

Numeric Size Designation		Dimensions			
		Height		Width	
ISO	On Dwg.	mm	inch (approx.)	mm	inch (approx.)
A4	4	210	8.3	297	11.7
A3	3	297	11.7	420	16.5
A2	2	420	16.5	594	23.4
A1	1	594	23.4	841	33.1
A0	0	841	33.1	1189	46.8
K	K	Computer Generated			

NOTE

Refer to *DEC STD 013-1 Standard Engineering Drawing Formats and Forms - General Purpose Drawing Sizes and Formats* for more information on standard engineering drawing formats and forms. For Computer Output Drawing Formats, refer to *DEC STD 013-3 Standard Engineering Drawing Formats and Forms - Computer Output Drawing Formats.*

2.4 MNEMONIC CODE

The 2-character mnemonic code indicates the type of information contained in the document. The mnemonic code assigned to a document is a means of identifying the end function the document serves, specifies, or supports. Placing the mnemonic code within a document identifier enables the user to recognize the function of the document.

Table 3 lists the mnemonic codes for engineering and manufacturing documentation.

2.5 BASE NUMBER

The base number may have a minimum of two and a maximum of seven characters. If the base number has fewer than seven characters, it shall be placed, beginning in the first character space, immediately after the dash. Leading zeros shall not be used. Trailing spaces shall not be used except in fixed-width formats.

The base number, by itself, will not identify a document. A complete document identifier is required to identify a single document.

The first two characters of a base number may be the part class. If the part class is (space, space), then there is room in the base number field for both the 5-character part basic field and one or two characters from the part variation field. This allows a document base such as VT100W for all variations that begin with VT100-W and document VT100Y for all variations that begin with VT100-Y.

NOTE

The base number of a document identifier may correspond with the base number of a part identifier. This correspondence, however, is neither required nor guaranteed.

2.6 VARIABLE IDENTIFIER

The 2-character variable identifier is used to indicate that two or more documents are related but different. The variable identifier may also provide a link between a part and a document. This link, however, is neither required nor guaranteed.

If this field contains fewer than two characters, a leading zero is not required. However, if you want the variable identifier of the document to match the variation identifier of the part, a leading zero may be needed. The default shall always be a zero.

For example:

A-SP-7665287-1-0 (Preferred)

A-SP-7665287-01-0 (Not preferred)

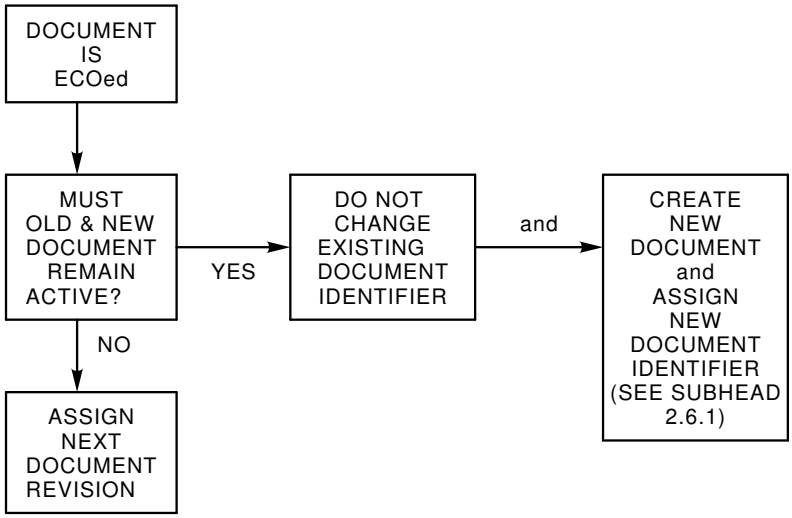
Because of the inherent confusion in assigning and maintaining significant numbers, documents must be linked to parts by use of a "Top Document". See heading 5 of this standard and *DEC STD 024-0 Top Document Requirements* for details.

2.6.1 Documentation for Multiple Active Revisions of Parts

At times it is necessary to maintain active documentation for multiple revisions of the same part. This is most often the case when dealing with modules and printed-wiring boards. The situation, however, can be used for all parts. The connection between the part(s), and documentation are in the drawing directory.

When it is determined that different documentation is required to support multiple active revisions of the same part, and "branching" (see subhead 2.8.5) has not been implemented, a new document identifier must be assigned. The flow chart shown in Figure 1 will assist in the decision process.

Figure 1: Flowchart of Documentation for Multiple Active Revisions of Parts


DOCUMENT IS ECOed
MUST OLD & NEW DOCUMENT REMAIN ACTIVE?
YES
DO NOT CHANGE EXISTING DOCUMENT IDENTIFIER
and
CREATE NEW DOCUMENT and ASSIGN NEW DOCUMENT IDENTIFIER (SEE SUBHEAD 2.6.1)
NO
ASSIGN NEXT DOCUMENT REVISION

This may be accomplished by changing either the variable identifier or reference identifier field. For example, if two UA (unit assembly) drawings must be active to support two revisions of the same part;

Existing Document Identifier): D-UA-XXXXXXX-0-0 Rev C

New Document Identifier): D-UA-XXXXXXX-0-1 Rev A

2.7 REFERENCE IDENTIFIER

The responsible engineer may elect to assign a reference identifier with characters that are significant (that is, meaning is built into the characters). If reference identifiers are not assigned by the engineer, Engineering Services (design/drafting) shall assign the next sequential number starting at zero.

If the field contains fewer than four characters, leading zeros are not required but at least one character is required. The default shall always be a zero.

2.7.1 Identification of Hard Copy Extracted From a Data Base

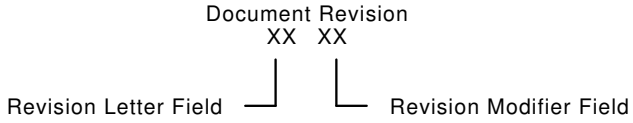
Documents created (plotted) from a data base shall have a media/size code of "K". The document shall have a note which lists the file name used to create the document and the design/drafting tools used, including that system's version. Refer to *DEC STD 185-0 Documentation of Computer Media in the Engineering Documentation System.*

2.8 REVISION

The 4-character revision field identifies changes to the document. The 4-character document revision is not the same as the part revision.

The governing standards for initiating changes to signed-off documentation are *DEC STD 100-0 Policy and Requirements for the Product Change Process.*, *DEC STD 100-1 Engineering Change Orders - Hardware*, and *DEC STD 100-2 Purchase Specification ECOs*. No change, addition, deletion, or correction shall be made to a signed-off engineering document or drawing without the authorization of an Engineering Change Order (ECO).

The document revision consists of two 2-character fields as shown below:



The rules for assigning and changing characters in the document revision field are presented in the following paragraphs.

2.8.1 Preliminary Document Revision

Prior to sign-off, all engineering documents shall use an AXnn revision change as a method of identifying successive versions of preliminary documents. The initial revision on the preliminary document shall be "AX00". As changes are made, the revision shall be incremented to "AX01, AX02,... AXnn", until the document is signed-off and released. See subhead 2.8.2. Parts do not use a preliminary revision scheme. See DEC STD 012-0.

Preliminary revision control is required if a document has been distributed, on any medium, to any fabrication, production, assembly, manufacturing, engineering, or Customer Services facility before original release of the part it describes. Any subsequent changes to such a document shall have a higher revision indicator, as described above.

2.8.2 Sign-off Document Revision

When the engineering document is ready for sign-off, the initial revision of the document shall be "A". A document may be initially signed off at a revision level higher than "A". In such cases, the revision history block shall indicate this.

For example: "RELEASED AT REV. B"

2.8.3 Subsequent Revisions

All changes made to a document after it has been signed-off shall be identified by letters (upper case alphabetic characters) except for advanced change requests. See subhead 2.8.4.

The letters shall be assigned in alphabetic order for each subsequent ECO-controlled change made to the document.

NOTE

Letters "G, I, O, Q and X" are not used. When letters A through Z have been used, the revision letters following Z shall be "AA, AB, ... AZ; BA, BB, ... BZ, and so on."

2.8.4 Advance Change Requests

Advance change requests are used by the engineer after sign-off of a document in order to provide the necessary data to evaluate a proposed change to a part. The most common use of advanced change requests is for modules and backplanes but it is applicable to all parts.

When an advance change request affects a document currently at revision "A", the revision indicators are assigned as follows:

A:	Current revision
BX00:	First document pass
BX01:	Second document pass
BX02:	Third document pass

In this example, assuming the third document pass is accepted, the advance change request is formalized as an ECO and the document is signed-off at revision "B".

2.8.5 Revision Modifier Field and Branching

Special revisions are NOT allowed unless branching has been implemented prior August, 1987.

Branching is used to denote changes to older/inactive revisions of documentation that cannot be implemented in the current documentation. It has a limited use.

The Revision Modifier is used to denote "branching" from the normal revision flow. It is a numeric character which is incremented by one each time a change is made within the deviant branch. A revision modifier of zero (0) is not shown in the revision modifier field. The field shall not be filled with zeros (00) but with space-space if a fixed field application is being considered.

Using the example in Appendix A, to maintain documents that support multiple revisions of the same part the revision of the existing document must "branch" and a new document revision must be created. The "branched" and new document identifier are both active.

For example:

Existing Document Identifier: D-UA-XXXXXXX-0-0 Rev C

Branched Document Identifier: D-UA-XXXXXXX-0-0 Rev C1

New Document Identifier: D-UA-XXXXXXX-0-0 Rev D

For example, if an ECO to a document with a revision of C1 requires another revision, that revision will be C2. Subsequent ECOs along this "branch" will be C3...Cn. Secondary branching, C2.1 for example, is illegal. A new document number is required in this case.

2.8.6 Inactivating Documents

Documents are normally inactivated by the next revision of the same document. For example, revision "A" of a document is made inactive when revision "B" of that document is released. There are rare instances however, when a document must be inactivated and there will be no subsequent document. To inactivate a document, an ECO is required. The revision of the document is changed to "INA". The inactive drawing must indicate the last active revision on the drawing.

The only cases where a document can be placed inactive without being replaced by a higher revision are as follows:

a. No parts ever built.

b. All parts which exist are now described by different documents.

c. No parts remain in use (inside or outside of Digital), or for internal support.

The fact that we are no longer manufacturing or buying a part is not a reason for inactivating its documentation.

NOTE

The concept of obsoleting documents is no longer used.

2.8.7 Reactivating Documents

If it is necessary to reactivate a document that has been inactivated, an ECO is required. The revision will be changed from "INA" to the next revision. For example, if the document was revision "C" prior to having been inactivated, it will be reactivated at revision "D".

2.8.8 Multi-Sheet Drawing Revision Control

The preferred method (refer to subhead 2.8.8.1) for controlling multi-sheet drawing revisions is to assign separate document IDs to the documents in the set, using the DRB 126C as the control. See *DEC STD 024-1 Top Document Requirements - DRB 126C Format*.

2.8.8.1 Controlling Numbered Documents Within a Set

The first, and recommended, method for controlling the revision of documents within a set is to create multiple single sheet drawings, as shown in the following example.

K-CS-M8526-0-CLK1 REV A

K-CS-M8526-0-CLK2 REV A

K-CS-M8526-0-CLK3 REV B

2.8.8.2 Revision Control by Page

A second method of drawing revision control uses a page control table (the DRB 126C or its equivalent can be used). The DRB 126C drawing directory is part of the document set and is updated whenever an ECO affects any one of the documents within the set. This method is appropriate for use with large documents.

To implement this method of revision control on a multi-sheet drawing set, assign the same document number to each page and use the page "x" of "n" designator to differentiate among pages. They are then tracked on a page control sheet which becomes page 1 of the set. A modified DRB 126C, or its equivalent, can be used for this. This is how the following example would be handled.

The revision of Page 1 is the revision of the document set that is entered into the DOCS system. The table showing the revisions of all the pages is on page 1.

The revision of Page 1 must be as high or higher that the revision of any other page in the document set.

K-SP-M8526-0-0 REV B Page 1 of 4

K-SP-M8526-0-0 REV A Page 2

K-SP-M8526-0-0 REV A Page 3

K-SP-M8526-0-0 REV B Page 4

NOTE

DRB 126C (EN-01242-16), Drawing Directory (Module) has replaced DRB 110B (EN-1239-16), Page Revision Control Sheet, but can be used the same way by removing the code DD and replacing it with the mnemonic for the drawing set that it controls.

If space runs out on the DRB 126C, the engineer may decide either to keep one sheet with the latest ECO information only, or to add a continuation sheet to the document.

2.8.8.3 Keeping all Pages at the Same Revision Level

The third method is shown for historical purposes only. This method maintains all the drawings in a set at the same revision. This method is appropriate for documents that contain 4 or less pages.

This third method used to control the revision level of multi-sheet documents keeps the same revision level throughout the set as one document identifier with one revision level. When using this method it is necessary to adjust every sheet each time one of them changes.

K-IA-7012345-01 Rev C Page 1

K-IA-7012345-01 Rev C Page 2

K-IA-7012345-01 Rev C Page 3

3 MANUFACTURING PLANT DOCUMENTATION (MPD) REQUIREMENTS

Manufacturing plant documentation is created to support plant specific requirements, procedures, and processes. This documentation is only valid within the plant that created the document. For more information refer to *DEC STD 115-0 Manufacturing Plant Documentation (MPD) Identification and Control.*

All the requirements of heading 2 apply to manufacturing documentation.

4 DOCS

DOCS is the control data base used for tracking documentation within the Engineering Sites.

Refer to the DOCS Manual for more information. Call the DOCS hotline, DTN: 296-4327, for a copy of the DOCS manual or for help in running DOCS.

The Engineering Services Site Design Libraries are responsible for maintaining appropriate information in DOCS.

5 TOP DOCUMENT DEFINITION

One document in every set of documents must be designated as the Top Document for the part that it describes.

For parts that need a link to the revisions of their documents, a DRB 126C is required. For details, refer to *DEC STD 024-0 Top Document Requirements.*

Table 3: Mnemonic Codes For Engineering and Manufacturing Documents

MNEMONIC CODE	GENERAL DESCRIPTION
AB	**Applicon Data Base**. Refer to DEC STD 185-0. A file or collection of files on computer media generated using the Applicon system and required for documentation and manufacture of printed circuit and hybrid assemblies.
AC	**Acceptance Procedures - Plant Specific**. Refer to DEC STD 115-0. Manufacturing plant unique acceptance process and procedure documentation for hardware and software products.
AD	**Assembly Drawing** Depicts the relationship of two or more subassemblies and/or parts joined together to perform a specific function.
AH	**Assembly Drilling Hole Layout** - INACTIVE 17-Jul-1974 (See DEC STD 140-0 for replacement)
AL	**Accessory List** - INACTIVE 17-Jul-1974 (Replaced by Shipping List - refer to mnemonic code PL)
AM	**Manufacturing Plant Administrative Documents - Plant Specific**. Refer to DEC STD 115-0. Administration documents regarding operational plans, policies, personnel, finance, purchasing, insurance, information control and data processing.
AP	**Appendage Document** - INACTIVE 17-Jul-1974 (No longer used in documentation structure)
AR	**Arrangement Drawing**. Shows items to indicate their relationship. This type of drawing normally does not contain any controlling dimensions.
AS	**Assembly Documentation - Plant Specific**. Refer to DEC STD 115-0. Assembly instructions, procedures, sequence or checklist required in a specific plant to supplement (not replace) engineering product documentation.
AU	**Audit-Related Documentation - Plant Specific**. Refer to DEC STD 115-0. Audit policies, plans, and procedures used to assess product quality. This applies to "in-process," "end of line," and field audits.
BD	**Block Diagram Drawing** Describes the overall concept or organization of a unit or system by the use of symbols representing functions or groups of functions and by interconnecting lines that show the relationship, information flow, and sequence of operation between the blocks.
BF	**Board Fabrication Drawing - Manufacturing Use Only** Shows circuit board outline including insertion tooling holes (if applicable), cross sectional layup, drill hole information and all other data required to fabricate a printed circuit board.

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

MNEMONIC CODE	GENERAL DESCRIPTION
BS	**Block Schematic Drawings** Shows, by means of lines and graphic symbols located in sequence of functions, the logical elements of a circuit.
CB	**Calibration Related Documentation - Plant Specific**. Refer to DEC STD 115-0. Documentation required for calibration and control of test and measurement equipment, tools, production fixtures, and so on.
CF	**Configuration - Plant Specific**. Refer to DEC STD 115-0. Hardware configuration and technical layout documentation used in manufacturing assembly where specific detail for this application is not available in Engineering documentation.
CL	**Cable List** Describes in tabular form, on A-size or larger sheets, the connecting points between connectors, or from logic to connectors. The list may present wire color, length, type of connector, location, type of cable, and signal name.
CN	**Conversion Procedures - Plant Specific**. Refer to DEC STD 115-0. Procedures for products being changed to different model designations or used products being refurbished.
CO	**CALDEC Data Base** - INACTIVE 17-Jul-1974. Refer to DEC STD 185-0.
CP	**Components Lists** Tabulates electrical components, their value and connecting points which are external to a mounting panel wiring plane. Items must be itemized by Drawing Number/Part number and Description.
CS	**Circuit Schematic**. Refer to DEC STD 056-0. A diagram that shows, by means of graphic symbols, the electrical connections and functions of a circuit. The schematic diagram facilitates tracing the circuit and its functions without regard to the actual physical size, shape, or location of the component device or parts. Every printed circuit board shall have a circuit schematic. A circuit schematic may be used instead of a block schematic (BS). (See also HD).
CV	**Customer Variation** Specifies optional equipment used in lieu of standard equipment to meet the individual needs of a customer such as a customer's own logo panel.
DA	**Detail Assembly Drawing** An assembly drawing that depicts some items in detail on the drawing instead of preparing separate detail drawings.
DC	**Decal Drawing** - INACTIVE 24-Jun-1981 (Superseded by Artwork Documentation "SS")

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

MNEMONIC CODE	GENERAL DESCRIPTION
DD	**Drawing Directory** Refer to DEC STD 024-0. Shall define the parts and revisions, and their supporting documents at revisions, and provides a block diagram of assembly levels and tabulated indexes of all the documents that comprise parts.
DF	**Digital Standard Forms and Features** Documented definition for algorithms related to standard patterns, symbology, configurations, and forms/formats in design and manufacture of Digital products. Most commonly applied to Printed Circuit Board features such as drilling, step and repeat, Gerber plotting but can apply to any computer-generated data that requires the output dimensions or parameters be documented and controlled.
DG	**Digital Guidelines and Procedures**. Refer to DEC STD 001-0. Documented sources of reference information within Digital which are either guidelines or procedural in nature. It must be consistent in application throughout Digital, its subsidiaries and offices, even when the practice customarily involves only one or two departments. See also "DS".
DI	**Drawing Index** - INACTIVE 17-Jul-1974 (Superseded by Drawing Directory "DD")
DM	**Dock Merge Documentation - Plant Specific**. Refer to DEC STD 115-0. Policies, procedures, flow charts, checklists, and so on, related to Dock Merge applications in a specific manufacturing plant.
DO	**Document Control Related Documentation**. Refer to DEC STD 115-0. Documentation related to distribution, maintenance, and retention of documentation within a facility. "Documentation" includes corporate and local specifications and standards. It also includes records that apply to any product shipped or service rendered to a customer.
DS	**Digital Standards, Policies**. Refer to DEC STD 001-0. Documented source of information within Digital that is management policy or mandatory in nature. It must be consistent in application throughout Digital, its subsidiaries and offices, even when the practice customarily involves only one or two departments. **NOTE** **A Digital Standard may also contain guidelines or procedures, if they cannot conveniently be separated from the content of the policy or standard. If the guideline or procedure can be kept separate it should be defined as a Digital Guideline and Procedure. Refer to "DG" above.**
EC	**Etch Cut Drawing**. Refer to DEC STD 140-0. A layout of etch pattern, without components installed, showing the extent and location of required cuts in the conductive pattern.

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

FD **Flow Diagram Drawing**

Graphic presentation of equipment or system that explains the signal flow for individual inputs or classes of inputs.

FM **Facilities Management Documentation - Plant Specific**. Refer to DEC STD 115-0.

Policies and procedures regarding maintenance, security, plant engineering, and other facilities management issues.

GL **General Listing**

Any general listing, usually computer print out, that should be documented for a product, and is not covered by other mnemonic codes.

HD **Hierarchical Drawings**

Drawings that depict modular/block breakdown or other hierarchical design information that explains circuit schematics. (See also CS).

HI **Handling Instructions** - INACTIVE 17-Jul-1974 (Use "SP" Specification Code)

IA **Inseparable Assembly Drawing**

Depicts items permanently joined together to form an integral part. The items will have separate detail drawings.

IB **Illustrated Parts Breakdown**. Refer to DEC STD 117-0

A schematic illustration of replaceable parts used to facilitate identification and ordering of spare parts. For use in Field Maintenance Print Sets and internal repair documentation.

IC **Interconnection Drawing**

A form of connection diagram that shows the external wiring connection between different assemblies of a unit or between units of a system such as cable diagrams and power wiring.

IF **Interface File**. Refer to DEC STD 185-0.

A file or collection of files on computer media created from an engineering design data base or combination of data bases for transmission and/or communication with a process.

II **Incoming Inspection Procedure**. Refer to DEC STD 059-0.

Specifies the equipment to be used, the measurements to be checked, the sampling plan and the acceptable quality level (AQL) for a particular item or class of items. The procedure may be referenced in the Purchase Specification or construction drawing for that item.

IP **Inspection Procedures - Plant Specific**. Refer to DEC STD 115-0.

Procedures, checklists, and so on that apply to all stages of inspection in a plant (for example, incoming, preliminary, intermediate, final, and so on).

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

IQ **Installation Quality** . Refer to DEC STD 115-0 and DEC STD 009-1.

Documentation required for installation of product, relating to the interface with Field Service regarding products shipped to customers.

KB **CALMA Data Base**. Refer to DEC STD 185-0.

File or collection of files generated using the CALMA system and required for documentation and manufacture of integrated circuits and printed circuits.

KS **Key Sheet**

A customer site-oriented document that lists the unit model numbers and their serialized identification making up a customer system. (No longer an archived engineering drawing).

LO **Layout Drawing**

A scaled line drawing depicting assemblage of key areas requiring clarity for interpretation of the concept involved in designing a finished item.

NOTE

Layout Drawings are not always part of the permanent design documentation.

MC **Microcode Documentation**

Documentation that contains the source files, assemblers, word formats, simulators, loaders, debuggers, conversion programs, flow charts and procedures, and so on required to recreate and verify microcode. Whether the ultimate implementation is ROM, PROM, magnetic media or whatever.

MD **Mechanical Detail Drawing**

Delineates information to describe an item. This includes forms, dimensions, material, finish, tolerances, and other requirements as applicable.

ME **Manufacturing Engineering - Plant Specific**. Refer to DEC STD 115-0.

Manufacturing Engineering related documentation within a plant, including manufacturing hardware and software support, and ECO control. Also includes applicable industrial engineering standards used by Digital at a particular plant.

MH **Module History** - INACTIVE - 08-Aug-1986 (Replaced by Revision Matrix Document "RM")

ML **Master Drawing List** - INACTIVE 17-Jul-1974 (Superseded by Drawing Directory "DD")

MN **Manual**

Used for handbooks and procedures related to Digital standards or guidelines, internal design tools, and manufacturing processes. (See DS and DG codes)

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

MP **Microprogram**

Listings that show the operation(s) performed in each microstep, the control store fields, and contents for each microstep, and any other documents deemed useful in describing the microprogram.

MT **Material Control - Plant Specific**. Refer to DEC STD 115-0.

Material control procedures for the forecasting, storage, allocation, handling, and distribution of materials.

MU **Module Utilization Drawing**

Depicts module type, location, and the name of the logical elements being used for each module represented.

NP **New Product Related - Plant Specific**. Refer to DEC STD 115-0.

Documents related to new products development, introduction, and monitoring.

OC **Option Configuration Drawing** - INACTIVE 17-Jul-1974 (Replaced by Arrangement Drawing "AR")

OD **Outline Drawing**

Shows overall size of equipment, clearances, mounting dimensions, and other necessary dimensions and notes to describe mechanical and electrical requirements for installation purposes.

PA **Packaging Assembly Documents**

Documents intended primarily for the use in construction of shipping packages which give a clear, accurate description of the requirements for materials, procedures, and packaging processes.

PC **Printed Circuit (Integrated Circuit) Documentation**

1. Printed Circuit (Integrated Circuit) Data base.

A file or collection of files on computer media. Refer to DEC STD 185-0. Used to document computer-generated data required for design and manufacture of printed circuit boards and integrated circuits.

2. A Printed Wiring Drawing

Accurately scaled layout depicting the conductive pattern of a printed wiring board.

PD **Production Control - Plant Specific**. Refer to DEC STD 115-0.

Documents related to production planning, order administration, scheduling, inventory control and similar production control areas.

PG **Packaging Instruction - Plant Specific**. Refer to DEC STD 115-0.

General packaging procedures and product specific packaging requirements.

PI **Packaging Instructions** - INACTIVE 17-Jul-1974 (Replaced by Specification "SP")

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

PL **Parts List**. Refer to DEC STD 025-0.

A computer generated or manual tabulation of fabricated and purchased parts necessary to manufacture and assemble an end item.

The parts list format is also used to specify the Shipping List and Software List and must be noted as such in the title block.

1. Shipping List

Specifies all hardware, miscellaneous items, documentation sets, lists and manuals, including the Software List, that are shipped as items required by a unit or system to maintain that unit or system through the installation and warranty period. Items must be itemized by Drawing Number/Part Number and description.

2. Software List

Specifies all program-related software items to be shipped as a necessary part of a unit or system. Items must be itemized by Drawing Number/Part Number and description.

PP **Preship Procedures - Plant Specific**. Refer to DEC STD 115-0.

Procedures used to define manufacturing plant process for preparing a finished product for customer shipment. This includes consolidation of all parts of the customer order, packaging, paperwork preparation, and final inspection.

PR **Process Documentation - Plant Specific**. Refer to DEC STD 115-0.

Documentation defining manufacturing plant process control summaries, flow charts, checklists, procedures and manufacturing specifications. This includes integration procedures and operating instructions.

PS **Purchase Specification**. Refer to DEC STD 055-0.

Purchase Specifications parametrically define the pertinent characteristics and requirements of a purchased item. It is intended as a document for communication of Digital's requirements to suppliers or potential suppliers of the purchased item.

QP **Qualification Procedure**

Documentation providing the procedures that Component Engineering Evaluation Laboratories use to qualify or requalify purchased items.

QU **Quality Related Documentation - Plant Specific**. Refer to DEC STD 115-0

Quality related documentation including quality control checklists and procedures used to assure or measure product and process quality. Quality assurance and quality engineering documentation that apply to internal or vendor quality and failure analysis/corrective action are also covered in this category.

RE **Rework or Repair Procedures - Plant Specific**. Refer to DEC STD 115-0.

Rework or repair procedures used to make an item meet specification requirements or make the item functional.

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

RL **ROM Listing** - INACTIVE 17-Jul-1974 (Replaced by "PS"). Refer to DEC STD 184-0.

RM **Revision Matrix Document**

Specifies revision inter-dependencies among parts, such as hardware, software, microcode, diagnostics, and so forth. (See DEC STD 068-0)

Also used for tracking relationships of hardware to revisions of specific components, and the like, when required by Engineering.

RS **Replacement Schematic Drawing** - INACTIVE 17-Jul-1974

(No longer used in Documentation Structure.)

SA **System Arrangement**

Specifies quantities, items, and other necessary material for the complete documentation of any packaged system configuration.

SC **Source Control Drawing**

Specifies the source that exclusively provides the performance installation and interchangeability characteristics on an item that has been selected and tested for a specific application by Digital Equipment Corporation.

NOTE

This code has been superseded by "PS" Code for all classes other than 50 class, where it is used on drawings to provide manufacturing information to vendors for building printed-wiring boards.

SD **System Diagram** - INACTIVE 17-Jul-1974 (Superseded by "AR" Code)

SF **Safety Related Documentation - Plant Specific**. Refer to DEC STD 115-0.

Documentation used to prevent hazardous conditions on a product or in a working environment in a manufacturing plant. This includes safety test procedures (for example, hypot), and procedures used to identify and correct product safety problems prior to customer shipment.

SH **Shipping List** - INACTIVE 17-Jul-1974. Refer to "PL" Code (uses same format).

SL **Software List** - INACTIVE 17-Jul-1974. Refer to "PL" Code (uses same format).

SP **Specifications**

Any document that gives a clear, accurate description of technical requirements for item materials, equipment characteristics including test equipment, processes, or procedures such as handling instructions.

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

SS **Artwork Documentation** (formerly Silk Screen Drawing)

Accurately scaled layout on a dimensionally stable material depicting the nomenclature for identifying functional controls, reference designations, and notes on panels, consoles, chassis, brackets, and so on. This documents the artwork used to create tooling for stamping, molding, or silk screen, decals, and so on for this purpose. Consolidates DC and SS artwork under one mnemonic - SS.

ST **Soft Tooling Data**

Documentation that contains the soft tooling data/files necessary for manufacturing to build, rework, and/or test modules or printed circuit boards.

SU **SUDS (Stanford University Drawing System) Data Base**. Refer to DEC STD 185-0.

A file or collection of files on computer media created using SUDS and used for engineering product documentation to other CAD/CAM systems.

TC **Table of Contents**

Defines the drawing and subsidiary print sets included in a particular print set. Shown also are variations of that system or option covered by the table of contents and if a variation is inactive. Refer to DEC STD 117-0 for TC in Field Maintenance Print Sets.

TD **Timing Diagram Drawing**

Shows the timing relationship of important pulses, levels, and transitions throughout a unit.

TG **Training Documentation - Plant Specific**. Refer to DEC STD 115-0.

Documentation that covers theory and manual skills necessary to meet job qualification criteria in a manufacturing plant.

TL **Tooling and Fixture Documentation**. Refer to DEC STD 115-0.

Documentation related to tooling or fixtures required for manufacturing plant unique applications and those covered by 94-class tooling documentation.

TM **Test Method** - INACTIVE 17-Jul-1974 (Replaced by "SP" Code)

TP **Test Procedure or Test Flow Charts - Plant Specific**. Refer to DEC STD 115-0.

Procedures or flow charts for all types and levels of testing within manufacturing plants, such as checkout test, reliability test, vibration test, thermal cycle test, burn-in test, final test, system level test, and so on.

TR **Pulse Transformer Drawing** - INACTIVE 17-Jul-1974 (Use "IA" or "PS" Code)

TU **Touch Up Procedures - Plant Specific**. Refer to DEC STD 115-0.

Defines the final cosmetic preparation process that occurs after manufacture and before shipping in manufacturing plants.

Table 3 (Cont.): Mnemonic Codes For Engineering and Manufacturing Documents

UA **Unit Assembly Drawing**

Shows any combination of two of more parts, assemblies, subassemblies, and/or units mounted together to form a whole equipment normally capable of independent operation in a variety of situations.

UB **Unigraphics Data Base**. Refer to DEC STD 185-0.

A file or collection of files on computer media created using Unigraphics automated system and used for engineering mechanical assembly documentation and production.

VP **Vendor Product**

Revision status documentation.

WD **Wiring Diagram Drawing** - INACTIVE 17-Jul-1974 (Replaced by "WL" or "IA", "AD", "UA" Codes)

WI **Wire Ink Documentation**

1. Wire Ink Data Base

A file or collection of files on computer media used to document computer-generated data required for design and application of wire (ECO) ink on printed circuit boards.

2. Wire Ink Pattern and Solder Mask Drawings

Documents the dielectric solder mask and copper ink circuit patterns required for wire ink application to a printed-wiring board (PWB).

NOTE

Wire ink is no longer an active internaly-available Digital process.

WL **Wire List**

A computer generated or manual tabulation of interconnection information required for design, production and test of wirewrap modules or backplanes.

WP **Word Processed Documentation Data Base** - Inactive as of 31-Dec-1986 - Use the code appropriate to what is being done.

A file or collection of files on computer media created using a word processor and used for engineering documentation.

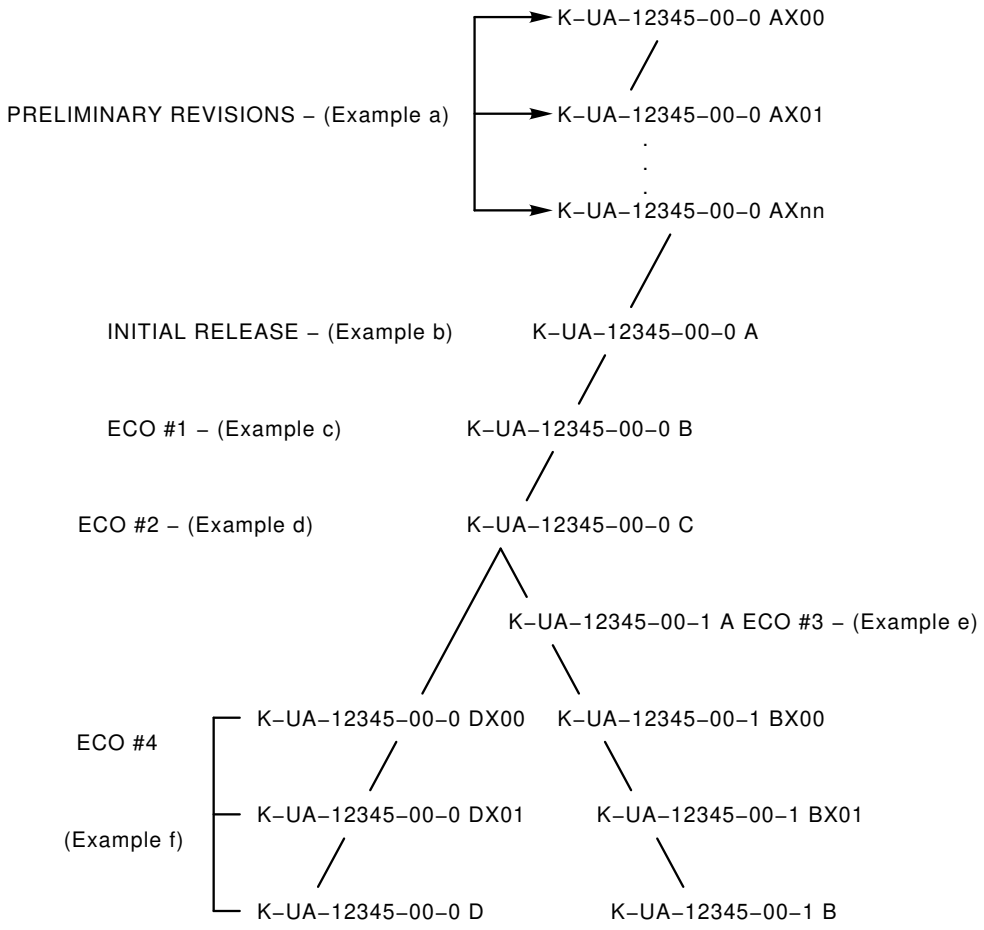
WT **Automated Wire Tester (AWT/BATS) Revision Status** - INACTIVE as of 01-Sep-1983; use "DD" code. Refer to DEC STD 140-3.

Defines revision levels of all documentation contained within a wirewrapped logic assembly.

APPENDIX A EXAMPLES OF REVISION FLOW

The following examples demonstrate the use of the document revision field. Refer to Figure 1. The examples are based on module documentation but apply to any document.

Figure 2: Flowchart of Document Revision Indicator Sequence



ECO #	DOCUMENT NUMBER	PREVIOUS REVISION	NEW REVISION	COMMENTS
MLO01	K–UA–12345–00–0	A	B	DOCUMENT CHANGE
MLO02	K–UA–12345–00–0	B	C	RETROFIT
MLO03	K–UA–12345–00–0	C	NO CHANGE	RE–LAYOUT
MLO03	K–UA–12345–00–1	NONE	A	
MLO04	K–UA–12345–00–0	C	D	RETROFIT
MLO04	K–UA–12345–00–1	A	B	RETROFIT

Example a: Documentation is unreleased. Therefore, the revision level on the first pass of the document is AX00. For each subsequent pass, the revision level is incremented by one.

Example b: Document is signed-off by the responsible parties and is accepted by the site Design Library at revision A. The AXnn code is replaced by A when released.

Example c: ECO - M1234-ML001 added a clarifying note to the document and changes the document revision to B. (The revision of the part does not change.)

NOTE

For part revision conventions refer to DEC STD 012-0.

Example d: ECO - M1234-ML002 is change (retrofit) to the module and its document. The revision of the document is changed to C.

Example e: ECO - M1234-ML003 is re-layout of the printed circuit board and creates new supporting documentation. For example, if the revision "C" document number is K-UA-12345-0-0, a new document number K-UA-12345-0-1 will be created. Its revision will be "A". Both documents are active because there are now two shippable revisions which require supporting documentation.

Example f: ECO - M1234-ML004 is a change (retrofit) to the modules and their documents. The revisions of the documents are changed from C to D and A to B. If revision control is required during the change process, the pre-release revision scheme may be used; interim documents with revisions "DXnn" and "BXnn" may be created.

When required, the preliminary document revision control scheme is to be used during a product change to identify the proposed new drawings, such as "mark-ups"; interim document revisions such as Dxnn and/or Bxnn may be created.

APPENDIX B METHODS FOR REVISING DOCUMENTATION

B.1 REVISIONS TO MANUALLY CREATED HARD COPY MEDIA

Revision to the contents of a manually created document shall be made by erasing, crossing out, adding information, or restoring/redrawing. Revised drawings must comply with DEC STD 182. For example:

a. Revised areas shall match the original letter font and line weight.

b. Erasures shall be made in such a manner that, when possible, no remaining "ghost" image will be discernible after reproduction.)

B.1.1 CHANGES TO DIMENSIONS

On printed wiring board drawings, changes to a dimension of a part shall be made to scale. It is permissible to leave the drawing unchanged if the new portion of the part is not noticeably different. Dimensions not to scale shall be underscored with a wavy line. Refer to DEC STD 114 for other dimension rules.

Changes to all computerized drawings must be made to accurately represent the true geometry.

B.1.2 CHANGES TO NOTES

Add new notes consecutively after existing notes. Notes need not indicate order of fabrication or processing. In certain cases, at the discretion of the engineer, an ECO can request rearrangement of notes. Do not use the number of a deleted note again unless the note is reinstated or the drawing is redrawn. Insert the word "deleted" to maintain consecutive numbers on the following notes. If only a portion of a note is to be changed or deleted, change or delete only that portion, without touching the remaining part of the note.

B.1.3 CHANGE OR DELETION OF VIEWS

When a part is deleted from an assembly, erase it from all related views. Delete all associated notes on the assembly drawing and all corresponding entries on the parts list, where applicable.

B.2 REVISIONS TO COMPUTER-GENERATED ENGINEERING DOCUMENTATION

Refer to *DEC STD 185-0 Documentation of Computer Media In The Engineering Documentation System.*

B.3 REVISION HISTORY BLOCK

A revision history block appears on each drawing. It is used to keep track of the ECO history for a document or set of documents. Page one carries the consolidated history of the drawing in the revision history block. When the revision history block area on page one is totally exhausted, the revision history may be continued on sheet two. In the event of a redraw, the revision history block shall contain the latest ECO information only. All prior revision history shall be omitted. See subhead B.5.

B.4 REVISION METHODS FOR DOCUMENT RESTORATION

An engineering drawing may need to be redrawn, or restored by creating a washoff to improve its physical or reproduction quality. These changes require an ECO if drafting touch-up is required on the new original. This is required even when no intentional content changes are made to the drawing. The following rules apply:

a. Redrawn documents shall have the revision advanced to the next letter.

b. Restoration wash-off requiring drafting touch-up shall have the revision advanced to the next letter.

c. If no changes are made on the redraw, the following notation shall be entered in the revision history block:

   "REDRAWN - NO CHANGE"; the revision letter is advanced and the original engineer signs it. If that engineer is not available, get an engineer from the next higher assembly to sign it.

d. If the drawing is revised as it is redrawn, the following notation shall be entered in the revision history block:)

   "REVISED AND REDRAWN"; the revision letter is advanced and the current engineer signs it.

e. The revision history block on the redrawn document will retain only the most recent ECO information. All prior revision history entries on the original drawing will be omitted from the new drawing.

f. The draftsperson executing a change will sign his/her name and/or date in the revision block. The checker shall write his/her initials in the CH'K block and the responsible engineer shall sign his/her name.

g. Signature Block - When a drawing is redrawn, print the names of the original draftsperson, checker, approvers, and dates. MD drawings must have a current producibility signature.

h. Field of Drawing - Remove all deleted (lined-out) views and notes in the field of the drawing.

i. Drawing Notes - Remove all notes deleted (lined-out) on the original drawing. Renumber the remaining notes consecutively on the redrawn document to coincide with the note numbers in the field of the drawing.

j. Integral Parts List - On a redrawn drawing that has an on-sheet parts list, create a K-PL and delete the on-sheet parts list.

B.5 DECIMAL PAGE NUMBERING SYSTEM

Page numbers are assigned in accordance with usual practice using a sequential numeric assignment, such as, 1, 2, 3, 4, etc.. If the need arises for a new page to be inserted at a point within the assigned sequence or as an addendum to an existing document, the new page will be assigned a decimal number the value of which is between the appropriate sheets.

For example, to enter an additional page between sheets 2 and 3 of a 4-page document, the new sheet would be assigned the number 2.5.

a. The digit to the left of the decimal point indicates that the new page falls after page 2 and before page 3.

b. The second digit is an arbitrary assignment that would allow further inclusion of new documents either in front of or immediately after this sheet.

As a second example, assume a document set contains pages numbered 2.5 and 2.6. To enter a new page between these sheets, the assigned Number would be 2.55.

a. Digits to right of the decimal point are assumed to have a zero (0) following the number (i.e., 2.50, 2.60).

b. The total value of 2.55 indicates that the new page falls between sheets 2.5 (2.50 and 2.6 (2.60)).

A Drawing Directory, EN-01242-16, DRB 126C, is required as the first page for any drawing set that uses the decimal numbering system so that all pages within a set can be identified.

APPENDIX C REFERENCED DOCUMENTS

C.1 EL-Class Digital Documents

EL-Class Number	Document Title
EL-00001-00	*DEC STD 001-0 Management of Technical Standards and Related Documentation*
EL-00009-01	*DEC STD 009-1 Product Engineering Specifications: Electrical, Physical, and Environmental Parameters*
EL-00012-00	*DEC STD 012-0 Part Identification Standard*
EL-00013-01	*DEC STD 013-1 Standard Engineering Drawing Formats and Forms - General Purpose Drawing Sizes and Formats*
EL-00013-03	*DEC STD 013-3 Standard Engineering Drawing Formats and Forms - Computer Output Drawing Formats*
EL-00024-00	*DEC STD 024-0 Top Document Requirements*
EL-00024-01	*DEC STD 024-1 Top Document Requirements - DRB 126C Format*
EL-00025-00	*DEC STD 025-0 Parts Lists*
EL-00055-00	*DEC STD 055-0 Requirements for Purchase Specifications*
EL-00056-00	*DEC STD 056-0 Circuit Diagrams and item Designations - General Requirements*
EL-00059-00	*DEC STD 059-0 Incoming Inspection Requirements*
EL-00068-00	*DEC STD 068-0 Policy for Documentation of Revision Levels of Units and Combinations of Units*
EL-00100-00	*DEC STD 100-0 Policy and Requirements for the Product Change Process*
EL-00100-01	*DEC STD 100-1 Engineering Change Orders - Hardware*
EL-00100-02	*DEC STD 100-2 Purchase Specification ECOs*
EL-00114-00	*DEC STD 114-0 Engineering Drawing Requirements - Industry Standards Adopted by Digital Engineering and Manufacturing Documentation Organizations*
EL-00115-00	*DEC STD 115-0 Manufacturing Plant Documentation (MPD) Identification and Control*
EL-00117-00	*DEC STD 117-0 Print Sets*
EL-00140-00	*DEC STD 140-0 Documentation, Data, and Release Requirements for Printed-Wiring Boards, Modules, and Backplanes - Introduction*
EL-00140-03	*DEC STD 140-3 Documentation Requirements for Backplanes (50, 54, and 70-Class)*
EL-00182-00	*DEC STD 182-0 Engineering Documentation Acceptance Criteria*
EL-00184-00	*DEC STD 184-0 Programmable Integrated Circuit Documentation: Process and Requirements*
EL-00185-00	*DEC STD 185-0 Documentation of Computer Media in the Engineering Documentation System*

Use VTX SMC to order copies of EL-class documents from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

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